

- Fig. 10. *B. Klædeni*, var. *torosa*, Jones: left valve. 11. Right valve.
 12. Left valve.
- Fig. 13. *B. lata*, Vanuxem, sp.: right valve.
- Fig. 14. *B. Bussacensis*, Jones: left valve.
- Fig. 15. *B. Ribeiriana*, Jones: left valve.
- Fig. 16. *B. affinis*, Jones: right valve.
- Fig. 17. *B. Barrandiana*, Jones: left valve.
- Fig. 18. *B. strangulata*, Salter: left valve.
- Fig. 19. *B. strangulata*, var. α : right valve.
- Fig. 20. *B. strangulata*, var. β : left valve. 21. Right valve (young).
- Fig. 22. *B. strangulata*, var. γ : left valve.
- Fig. 23 a. *B. bicornis*, Jones: left valve. 23 b. Ventral aspect of the same valve.
- Fig. 24. *B. seminulum*, Jones: left valve.
- Fig. 25. *B. simplex*, Jones: right valve.
- Fig. 26. *B. simplex?*: right valve. 27. Right valve.
- Fig. 28. *B. mundula*, Jones: right valve. 29 a. Left valve. 29 b. Ventral aspect of part of the same valve. 30. Left valve. 31. Left valve.

XV.—*On the Heart and Circulation in the Pycnogonidæ.*

By DR. A. KROHN*.

[With a Plate.]

THE opinion of Quatrefages that the Pycnogonidæ are destitute of a heart, has been contradicted by Zenker†, who has succeeded in recognizing this organ in *Nymphon gracile*. Zenker discovered it in the position where analogy would lead us to expect to meet with it; he describes it as a very delicate sac, furnished with ramified muscular fibres; its outlines may be most clearly distinguished in the neighbourhood of the last pair of legs. I had recently an opportunity, whilst examining a *Phoxichilus* (probably *P. spinosus*), of convincing myself most decidedly of the existence of the heart. I am thus enabled to furnish more exact details as to its form and structure.

The heart is a sac, of proportionably very large size, which is placed, as in all the Arthropoda, in the back, above the intestinal canal; it is seen to extend from the hinder margin of the last thoracic segment to the middle of the foremost one (Pl. VII. fig. 7). Whether it terminates at this point, or extends beyond it, must remain undecided, as further observations are prevented by the tubercle which rises on this part, upon the apex of which the four eyes are situated. The heart is divided into three chambers by two pairs of deep lateral notches or constrictions; the hinder

* From Wiegmann's Archiv for 1855, p. 6.

† Müller's Archiv, 1852, p. 383.

